

REMARKS

In response to the Office Action mailed July 23, 2004, Applicant proposes to amend his application and requests reconsideration in view of the proposed amendment and following remarks. No claims are proposed to be added or cancelled so that claims 1-8 remain pending.

Claims 6-8 are allowed.

New Formality Rejection

A new rejection concerning the clarity of claim 1 was made. Since no amendment had been made of claim 1 with respect to this issue, the rejection could have been made in the first Official Action. The rejection of claim 1 as indefinite is traversed, but the relocation of three words within the claim is proposed in an attempt to advance the prosecution of this patent application without devoting undue attention to this issue.

According to the Official Action, the phrase in claim 1 “maintain an average of the first temperature measured by the upstream temperature sensor and the second temperature measured by the downstream temperature sensor at a fixed temperature” is unclear because it is not certain what “type” of average is being maintained. In claims, the word “type” is considered indefinite and the comment here is likewise uncertain because of using that word. It is clear from the language of claim 1 as examined that the average maintained is an average of two temperatures, the first temperature and the second temperature. It is impossible to interpret that language of the claim any differently.

From the italicized words in the Office Action, it seems that the questioned language may be how an “average” of two temperatures can be maintained “at a fixed temperature”. Of course, the average of two temperatures is still another temperature since the units of the measured quantity do not change in the averaging process. It is apparent from the Office Action that the Examiner understands that the average is a fixed, i.e., constant, value, i.e., temperature.

The Examiner asks “does the circuit maintain an average temperature difference between the two sensors? Does it maintain each sensor at an average temperature that is independent of the other sensor?”. According to the Examiner, he cannot find the answer to these questions, making the claim indefinite. The answers are absolutely apparent from the language of the claim as examined. There is no reference to any temperature difference in the cited language of the claim. Where the Examiner might have developed the question concerning “an average temperature *difference*” is not known. The task of the Examiner is to read and interpret the claim language in accordance with its ordinary meaning unless a special meaning is attributed to the claim language in the specification, i.e., the draftsman of the patent application is his own lexicographer. Since there is no reference to a temperature *difference* in the claim, the alleged

possible interpretation of the claim as incorporating the word *difference* is excluded. It is clear from the claim that the average is a average of two temperatures. There is no discussion of maintaining each sensor at an average temperature and, again, it is unknown how such a question could even be asked. The claim plainly describes an average of two temperatures, not averaging of each of two temperatures independently. The claim was not and is not indefinite as further demonstrated by the failure to even make such a rejection in the first Official Action when the same language was presented in the claim.

If the Examiner remains confused as to the meaning of claim 1, he need only consult the patent application for an explanation, without importing into claim 1 any limitation not present there. Attention is directed to pages 11 and 12 of the patent application and particularly the Equation 7, at page 12, which provides the results of the manipulation of the Equations 1-6. As described in the paragraph beginning on page 12 in line 13, in Equation 7 all of the elements on the right hand side are constants. From elementary algebra, it is thus apparent that the term on the left side of Equation 7 must also be a constant. That term is the sum of the two temperatures of the sensors divided by two. Clearly, that quantity is, from elementary mathematics, easily understood and is the average that is unambiguously described in the words of claim 1, the average of a first temperature and a second temperature. There is no ambiguity in claim 1.

In studying claim 1 in an attempt to understand the basis for the rejection as to form, it became apparent that the phrase that is the object of the verb "maintain" is remotely located from that verb. Thus, in an attempt to advance the prosecution by responding in some fashion to the rejection, those final four words of the claim are relocated to be adjacent to the verb. This relocation of words cannot be considered a substantive amendment of the claim because there has been no change in the content of the claim through this amendment.

Request For Withdrawal Of Finality Of The Prior Art Rejection

The previous rejection of claims 1-5 as anticipated by Kawai et al. (U.S. Patent 5,965,811, hereinafter Kawai), has been changed to a rejection for obviousness. This change in the legal ground of the rejection was made although the only amendment in response to the first Office Action was the removal of a single word from the final paragraph of claim 1 for purposes of clarity. That amendment could not be considered substantive. Therefore, the new rejection was not necessitated by any action by the Applicant. Accordingly, the present rejection cannot properly be a final rejection. Applicant again respectfully requests the withdrawal of the finality of the rejection mailed July 23, 2004.

Response To Prior Art Rejection

In rejecting claims 1-5 as obvious over Kawai, the Examiner acknowledged that Kawai does not disclose the invention claimed in claims 1-5. With regard to the sole independent claim in this claim group, i.e., claim 1, the Examiner acknowledged a missing element and asserted that it would have been obvious to include that element.

“Kawai does not explicitly disclose that the circuit maintains the average of the first and second temperature sensors [sic] at a fixed temperature. However, those of ordinary skill in the art would recognize that maintaining a constant temperature difference between the heating element and the sensed air temperature would result in the average temperature difference of the first and second temperature sensors being maintained at a fixed temperature. (See MPEP § 2144.03).” Office Action at page 3.

Very little about the foregoing statement is correct. It is not even a correct reproduction as to what is claimed in claim 1. First, there is no limitation in the claim that the average of the first and second temperature *sensors* is at fixed temperature. The claim states that the average of the two temperatures measured by the sensors is maintained at a fixed temperature. Second, there is no statement in the claim regarding “maintaining a constant temperature difference between the heating element and the sensed air temperature”. Perhaps the Examiner is relying upon a passage in Kawai, which is discussed below, as the source of this representation. Third, there is no limitation in claim 1 concerning maintaining a constant temperature *difference* between the heating member and either of the two temperature sensors. Rather, according to the claim, what is maintained fixed is an average of the two temperatures measured by the two temperature sensors. Finally, the section of the MPEP cited by the Examiner concerns “Official Notice”. Reliance upon Official Notice is inappropriate and erroneous in the present situation because the proposition asserted is not readily apparent, is not a correct conclusion drawn from elementary scientific principles, is not supported by the documentary evidence or the factual explanation required when such an assertion is made, and is contrary to what is described in Kawai, i.e., the content of the file of the present patent application.

As pointed out at MPEP 2144.03 B, when an Examiner takes Official Notice of an alleged fact that is not supported by documentary evidence, the technical line of reasoning that supports the assertion must be “clear and unmistakable”. The MPEP, at 2144.03 A, states that Official Notice without documentary evidence to support an examiner’s conclusion is permissible only in rare circumstances. “Official Notice unsupported by documentary

evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.” None of these circumstances exists here. Since the Examiner has presented no documentary evidence supporting his assertion, the Official Notice must be withdrawn.

Presumably, the Official Notice relies upon an interpretation of Kawai at column 6, lines 30-44. That paragraph, referring to Figure 1 of Kawai, has some words in common with the Examiner’s assertion. The air flow element shown in Figure 1 of Kawai includes a heating element 4 that is maintained at a constant temperature relative to the temperature of the substrate 1. The temperature of the substrate 1 is measured by a resistance element 7. The resistance element 7, in effect, measures the air temperature because the resistance element 7 is thermally isolated from the heating element 4. Thus, in Kawai, a constant temperature difference is maintained between that air temperature and the heating element 4. However, contrary to the Examiner’s assertion, that temperature *difference* reveals nothing about the *average* of the temperatures of the two sensors 5 and 6 in Kawai that are disposed on opposite sides of the heating element 4.

Kawai conclusively demonstrates that the Official Notice is erroneous. Kawai, in that same column 6, in lines 46-64, describes what actually occurs in the Kawai sensor, referring to Figure 3 of Kawai. For the Examiner’s convenience, a copy of that Figure 3 is attached. As described in the cited passage of Kawai, the temperature distribution at the sensor when no air is flowing across the sensor is shown by the solid line of that Figure 3. The center of the heating element 4 is the mid-point of the dimension labeled L3. The center points of the temperature sensing elements 5 and 6 are the central points of the respective regions labeled L4a and L4b. The solid curve in Figure 4 of Kawai is entirely symmetrical about the heating element 4, meaning that the average of the temperatures measured by the respective temperature sensors 5 and 6 is equal to the temperature of each of those sensors. This average is indicated by the intersection of the center of the heating element 4 and the horizontal line added to the attached copy of Figure 2 of Kawai. (The average temperature referred to at column 6, lines 61-65 of Kawai, is the average temperature at the sensor, for example the average of the temperature distribution along length L4a at the sensor 5. This local average sensed is not the average of two temperatures measured by separate temperature sensors as in the invention.)

When air flows across the Kawai sensor, the temperature distribution across the sensor changes from the solid line to the distribution indicated by the broken line in Figure 3 of Kawai. The oblique line added to the attached copy of Figure 3 of Kawai passes through the indicated temperatures of the two temperature sensors when the air flows across the

sensor. The average of those two temperatures is indicated by the intersection of the oblique line and the central point of the dimension L3 in the attached Figure 3. It is easily seen that the respective averages of the two sensed temperatures in the two different circumstances illustrated in Figure 3 of Kawai are different, not the same as asserted in the Official Action.

This observation shows that Kawai cannot support the proposition for which it was cited. For example, in the Kawai flow detection apparatus, if the *difference* between the temperature of the heating element and the sensed air temperature were maintained constant, the average of the two sensed temperatures would directly depend on the rate of air flow across the sensors, so that the average of the temperatures could not be maintained constant. The contrary assertion by the Examiner, quoted above at page 6 of this Response, is not correct.

For these reasons, the Official Notice is entirely contrary to the disclosure of Kawai. In other words, the Official Notice is not only speculative, it is technologically wrong.

The "Official Notice" is essential to the propriety of the rejection of claims 1-5. Since that Official Notice does not conform to the requirements of the MPEP for lack of documentary evidence and the evidence of record demonstrates that the Official Notice is erroneous, the rejection of claims 1-5 as obvious must be withdrawn.

While further discussion is not required with regard to the rejection of claims 2-5, Applicant additionally points out that claim 3 is clearly patentable over Kawai, independent of the patentability of claim 1.

In the structure of claim 3, in addition to the elements of the flow measuring apparatus of claim 1, second and third heating members are added, namely, an upstream heating member and a downstream heating member. The respective additional heating members are interposed between the central heating member and the upstream and downstream temperature sensors, respectively.

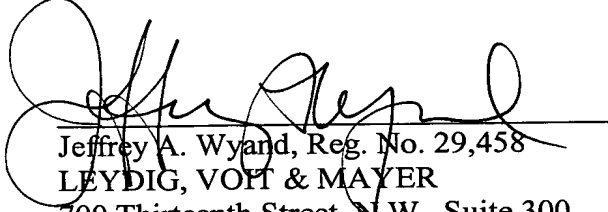
According to the Examiner, the flow sensor in Figure 1 of Kawai includes upstream and downstream heating elements 11. This statement is contrary to the description within Kawai. The elements 11 are designated by Kawai as thermal conduction promoting members and are described as being a metal, such as platinum. These members are entirely passive and are placed between the heater 4 and the temperature sensors 5 and 6 merely to facilitate the flow of heat from the heater to the respective temperature sensors by reducing the thermal resistance in the space between the heater and the temperature sensor. Further, it is apparent from Figure 1 of Kawai that there are no leads extending to either of the thermal conduction promoting members 11 through which an electrical current could be supplied for generating heat. Every heating member and every sensor in Kawai and the present application has two leads so that current can flow through the element for heating or voltage can be measured

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across the element for determining temperature. The representation that the thermal conduction promoting members 11 of Kawai correspond to the upstream and downstream heating members of claim 3 is, at best, erroneous. Thus, the rejection of claim 3, independent of any other rejection, is erroneous and cannot properly be maintained.

Reconsideration and allowance of all claims now pending are earnestly solicited.

Respectfully submitted,



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JAW:tps

FIG. 2

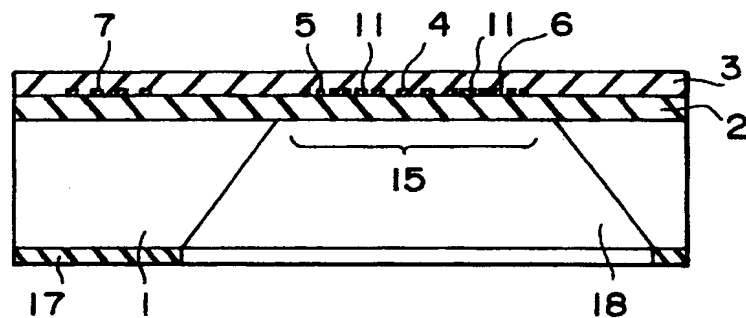


FIG. 3

